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1/20

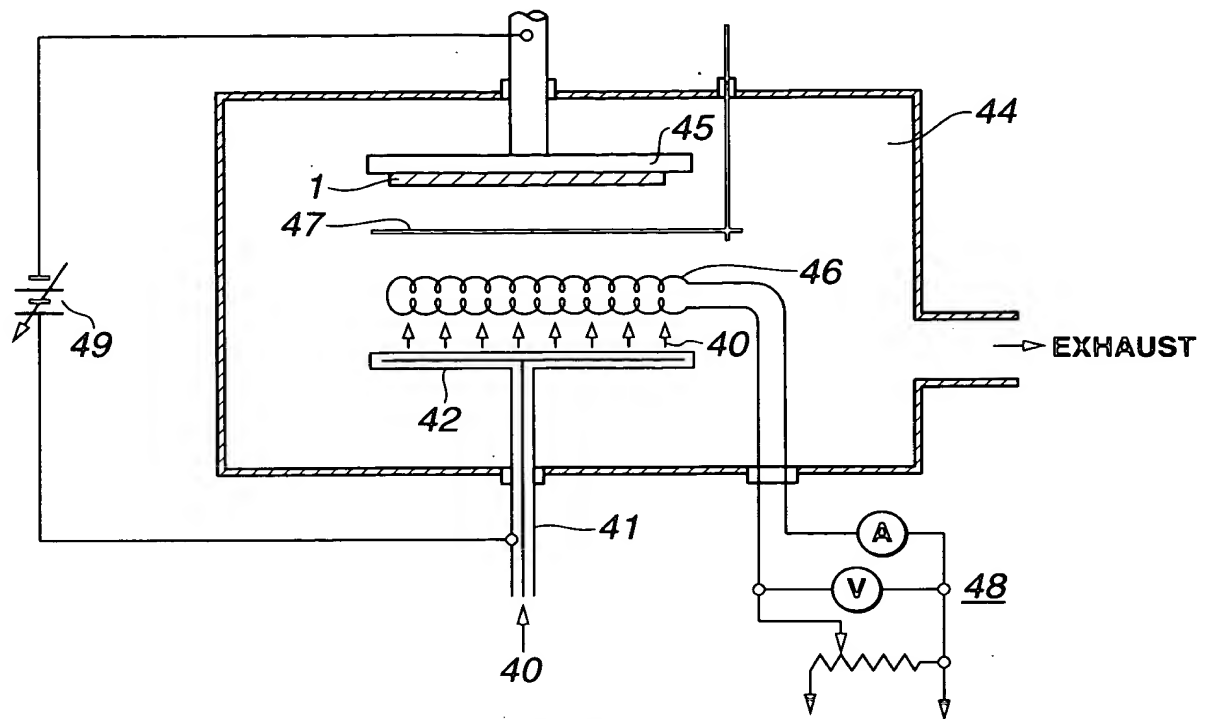


FIG. 1

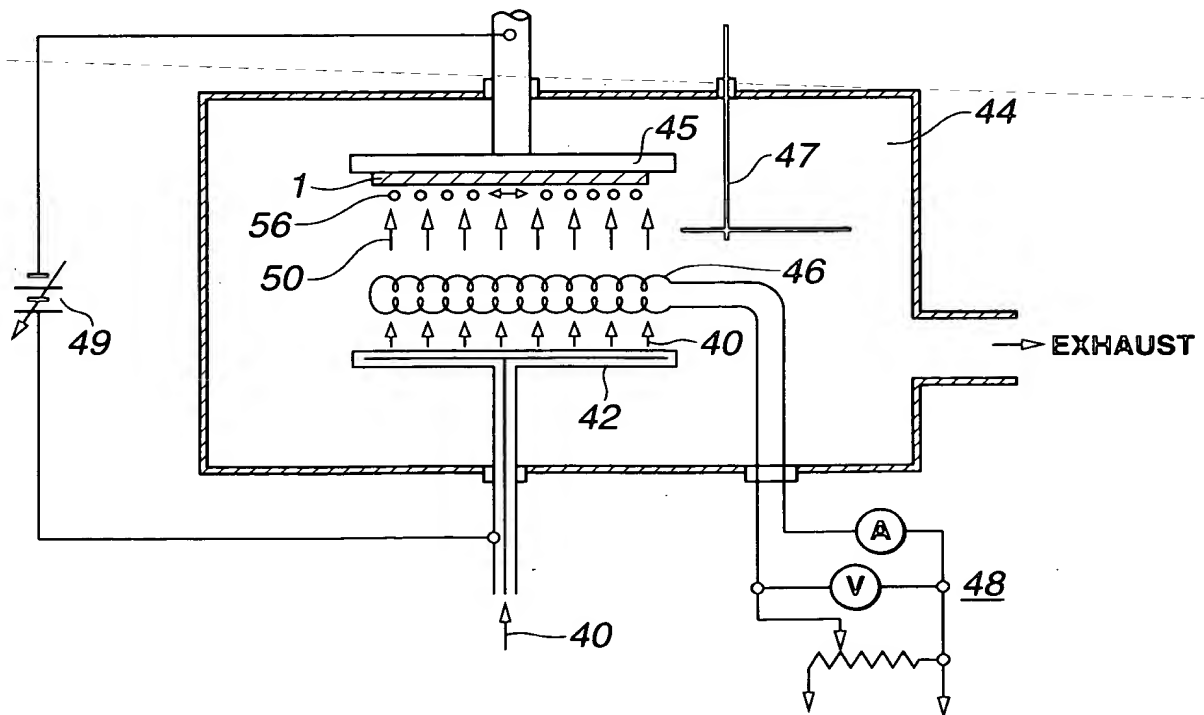


FIG. 2



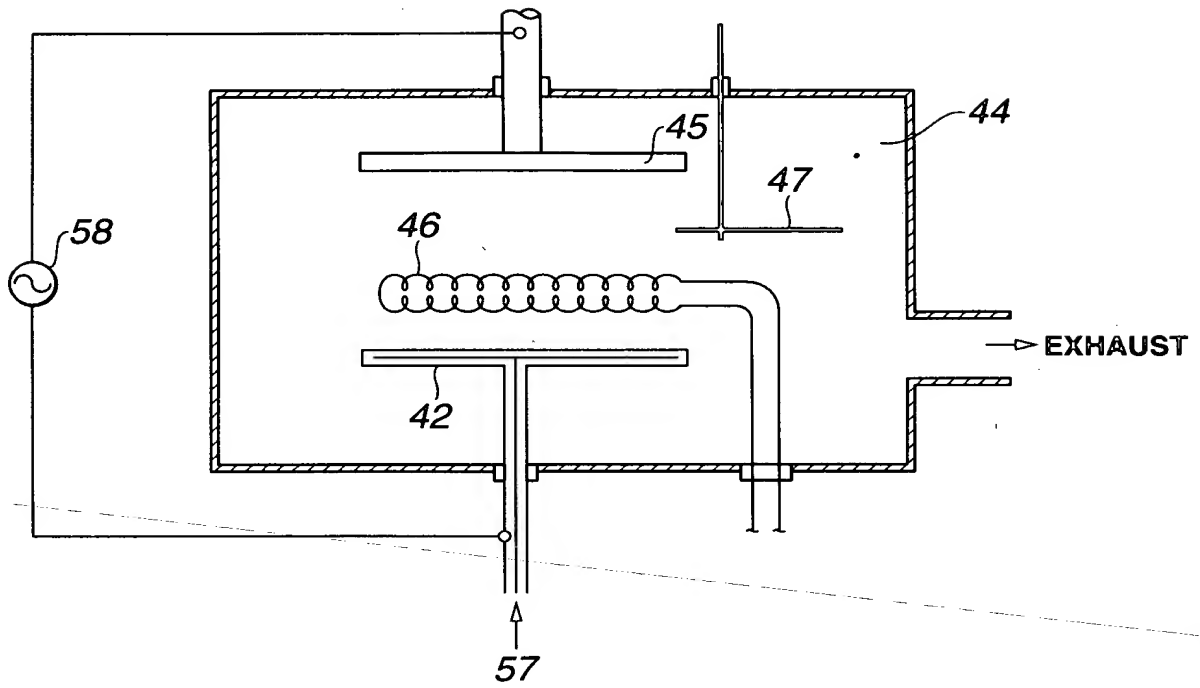


FIG.4

FIG.5A

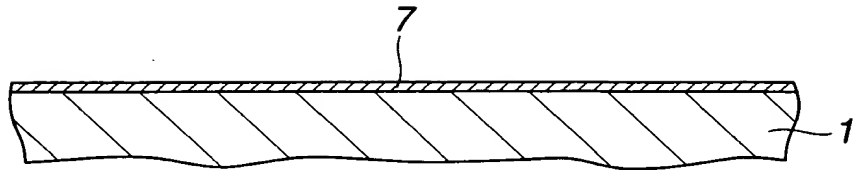


FIG.5B

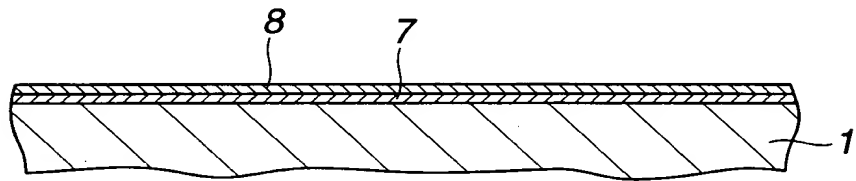


FIG.5C

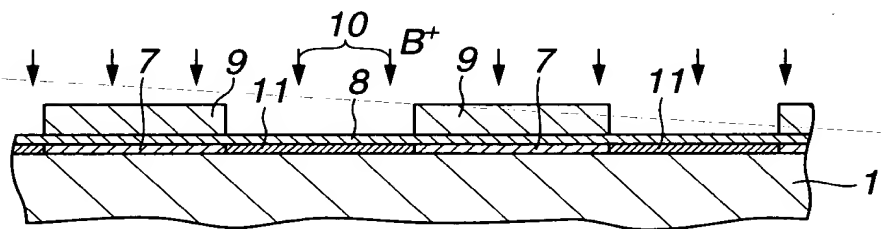


FIG.5D

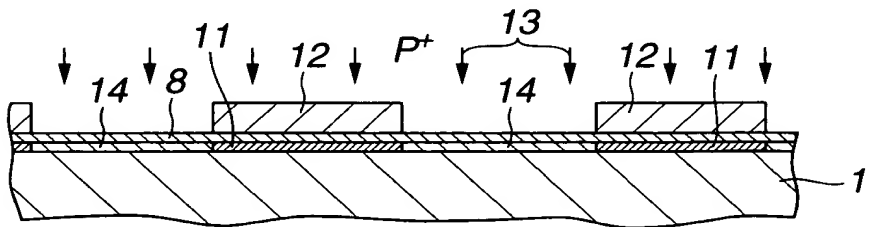


FIG.5E

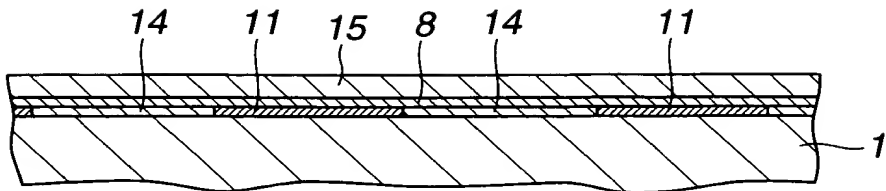


FIG.5F

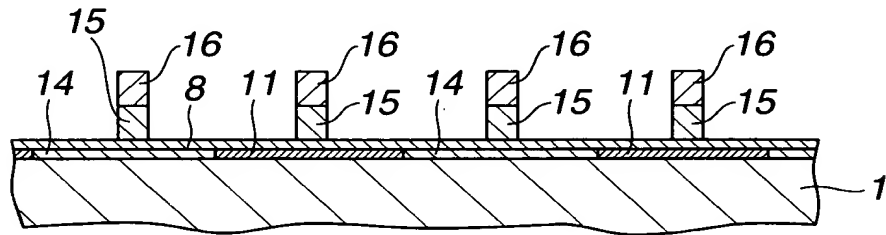


FIG.5G

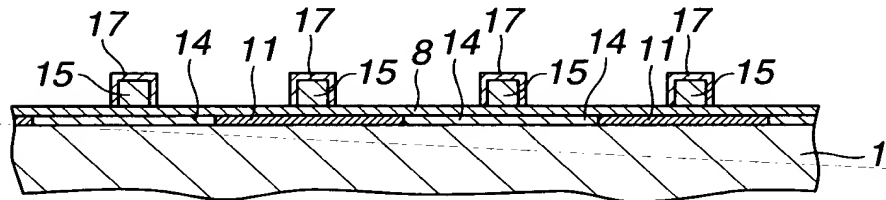


FIG.5H

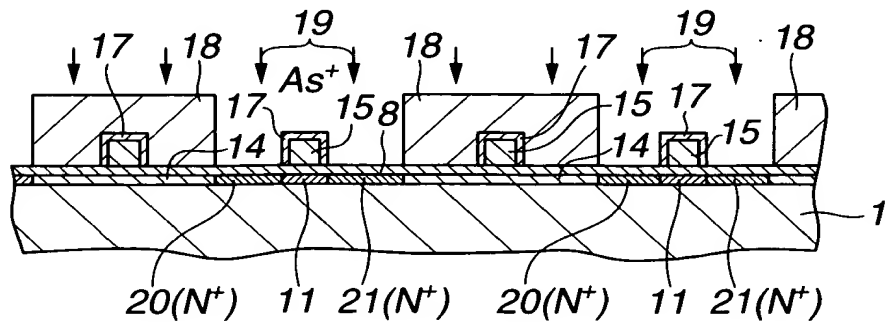


FIG.5 I

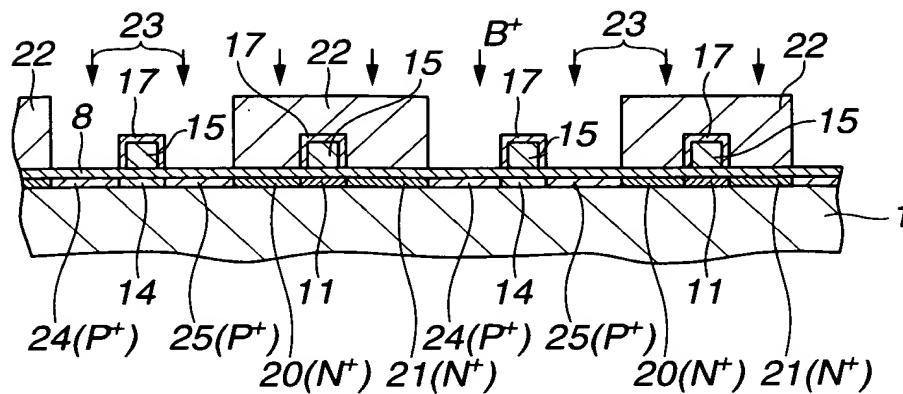


FIG.5J

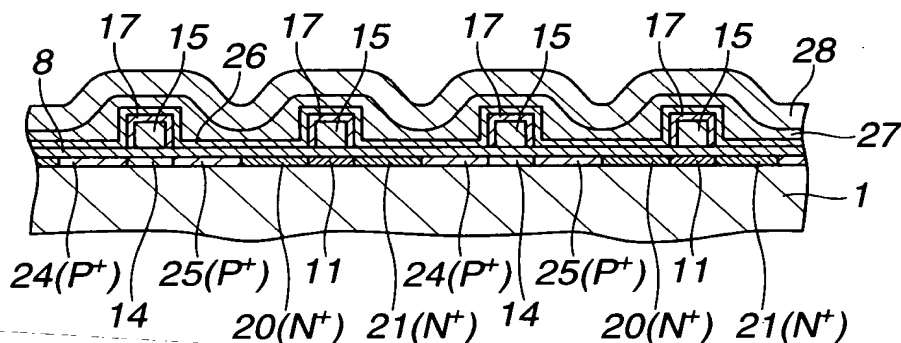
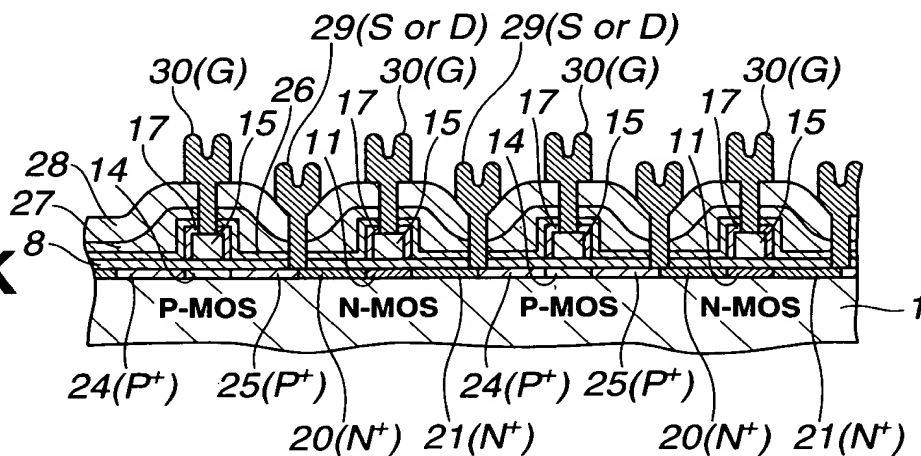


FIG.5K



PIXEL
PORTION

PERIPHERAL
CIRCUIT PORTION

FIG.6A

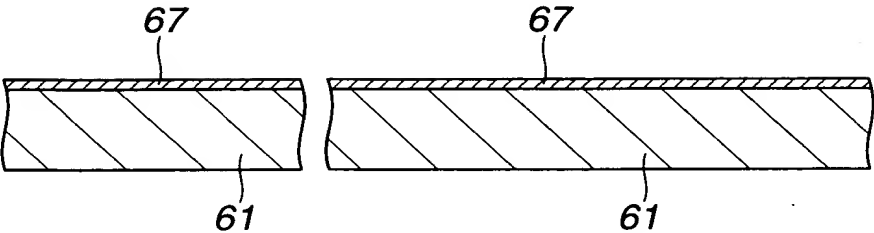


FIG.6B

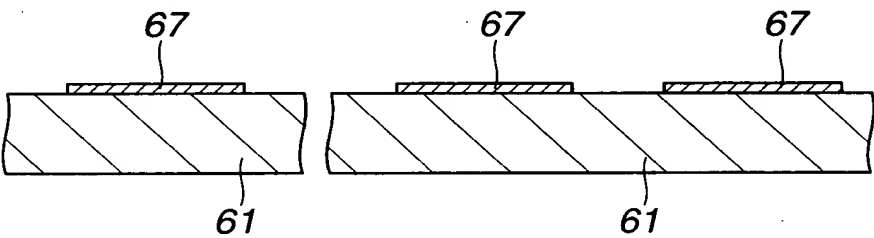


FIG.6C

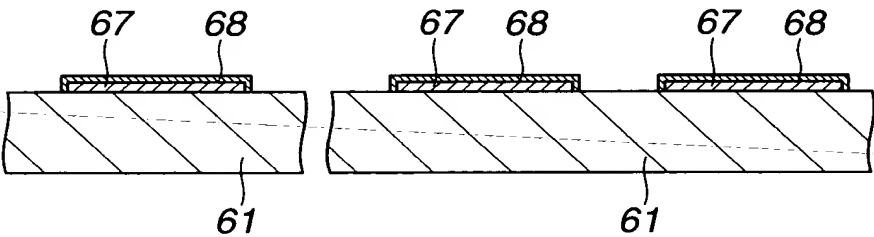
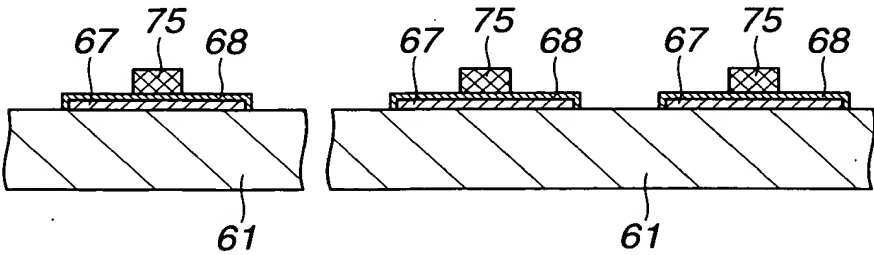
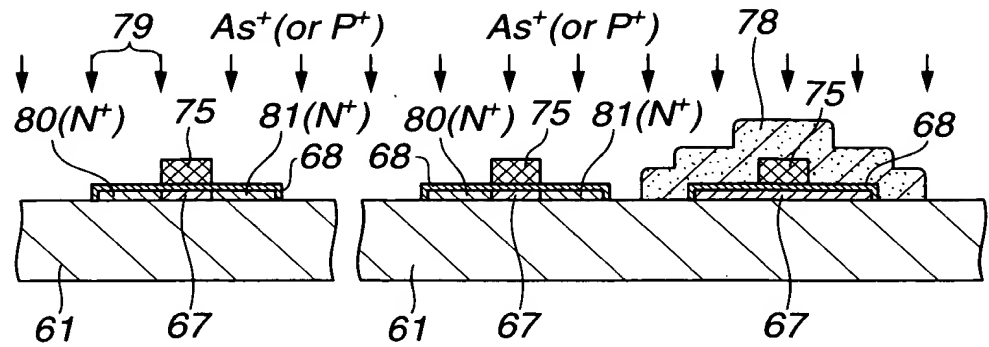
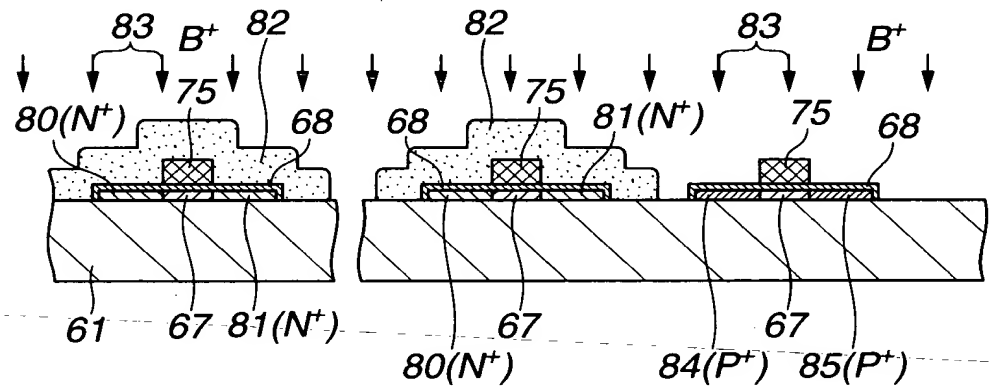
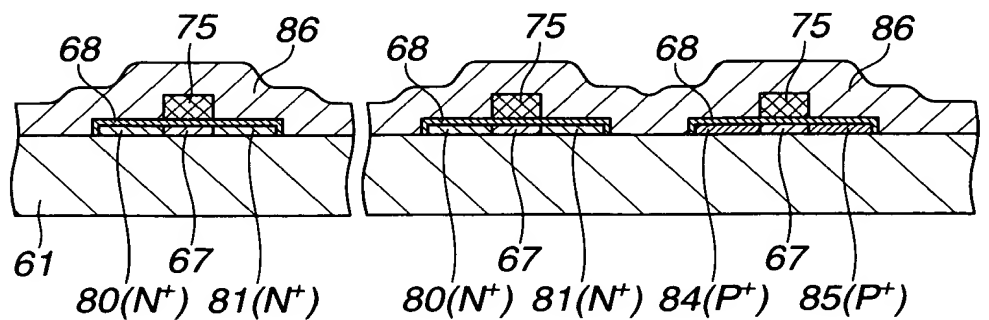
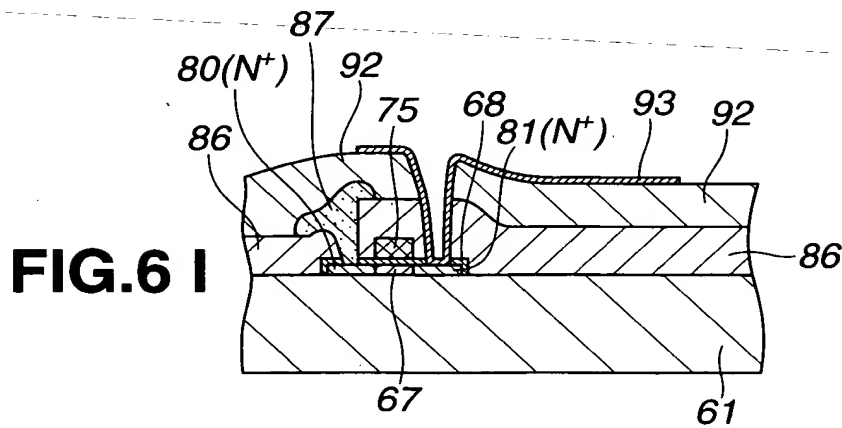
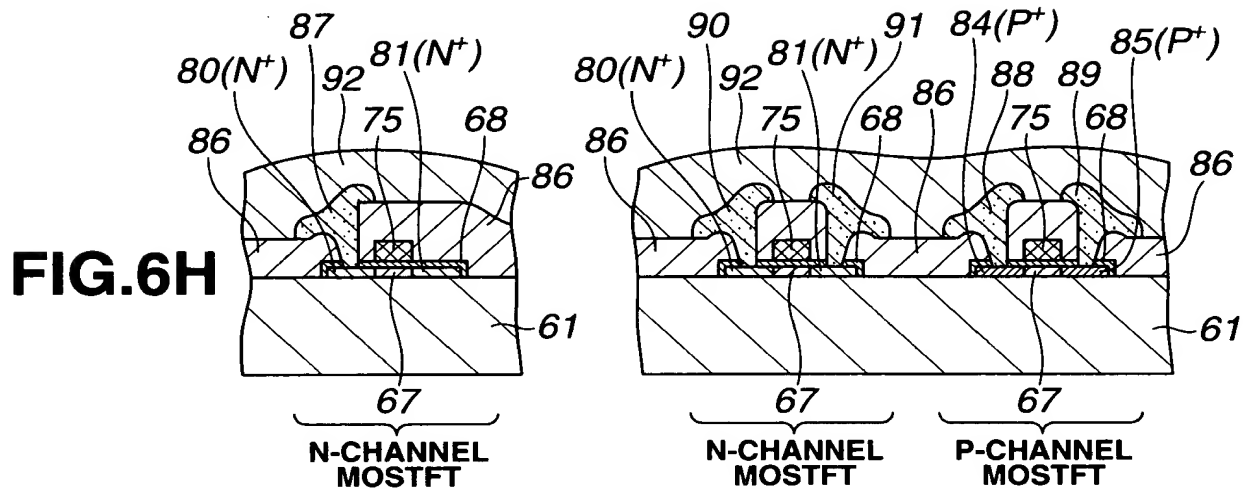


FIG.6D



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FIG. 6E**FIG. 6F****FIG. 6G**



10/20

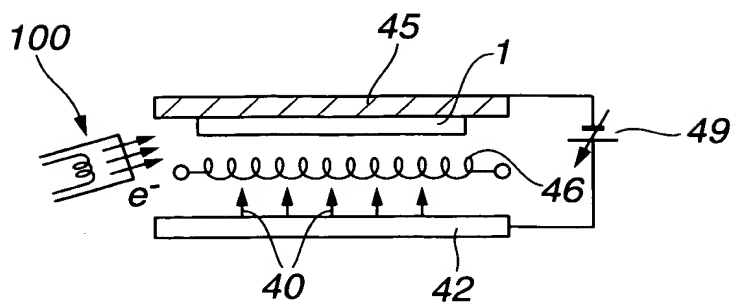


FIG. 7

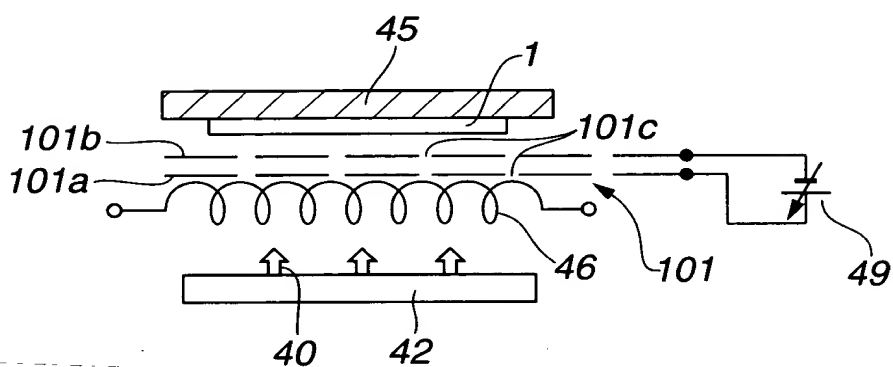


FIG. 8

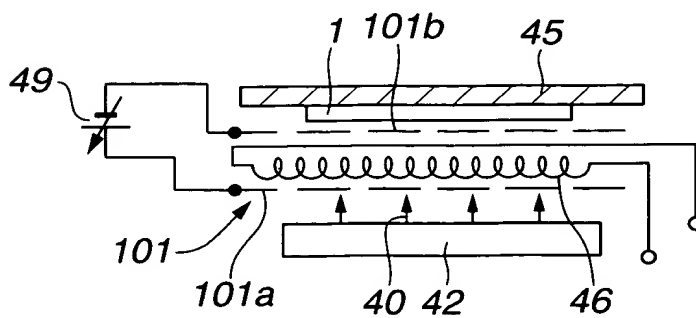
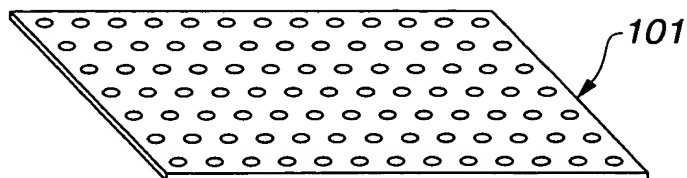
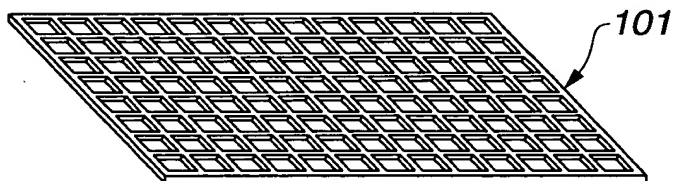
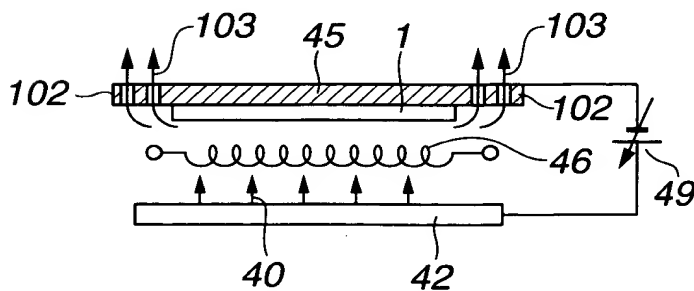


FIG. 9

09/646680 10/20

11/20

**FIG. 10****FIG. 11****FIG. 12**

12/20

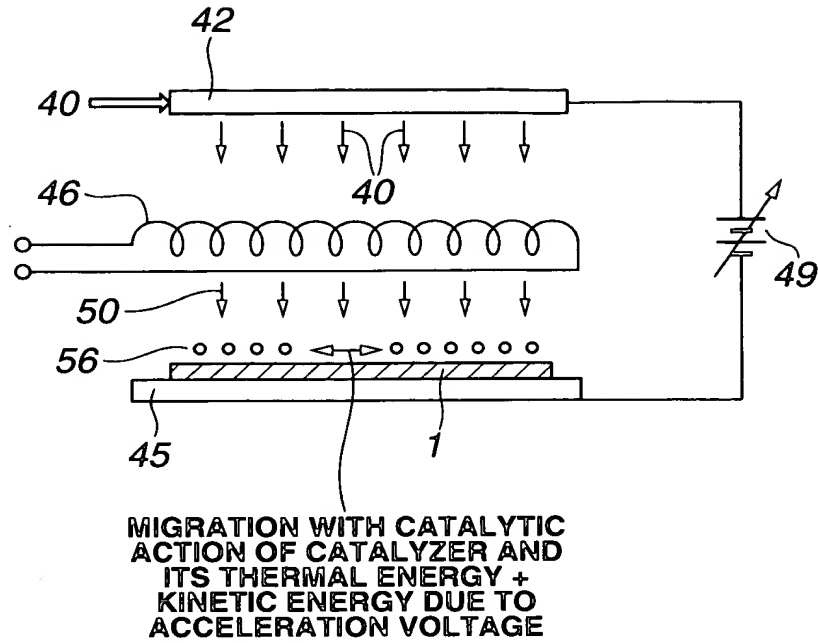


FIG.13

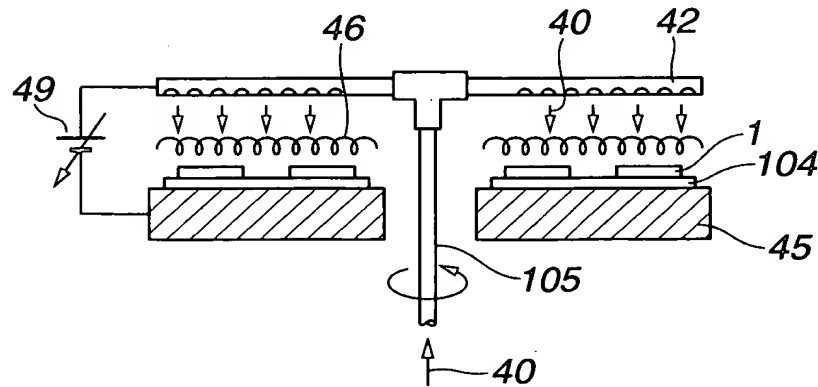


FIG.14

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13/20

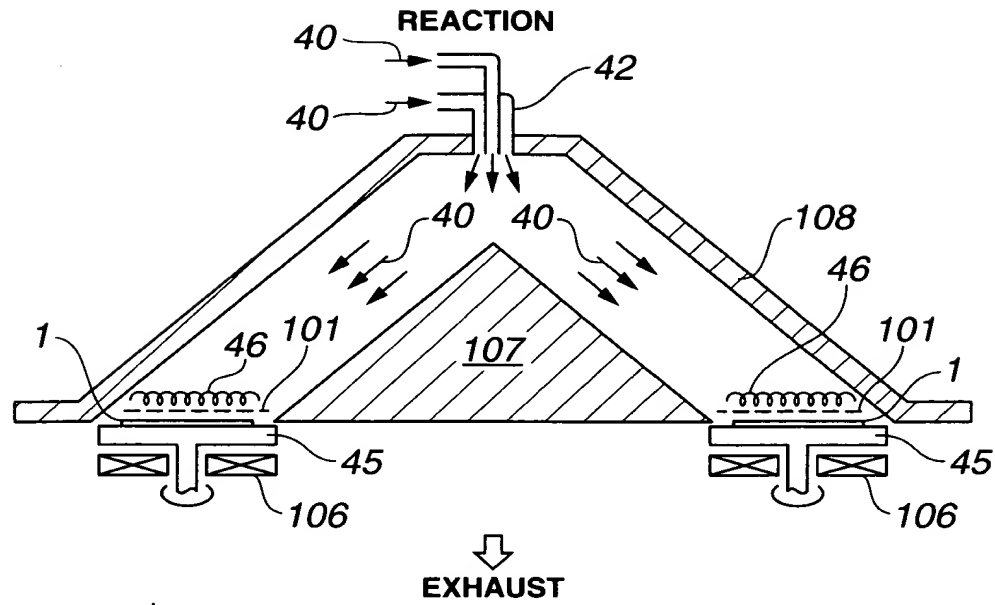


FIG.15

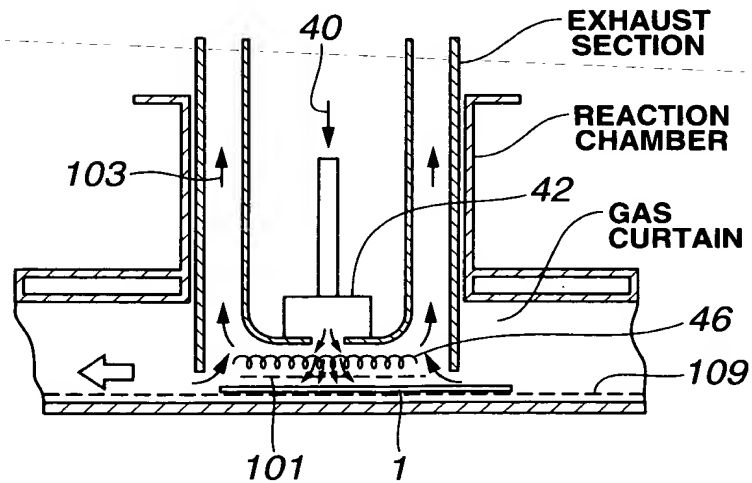


FIG.16

14/20

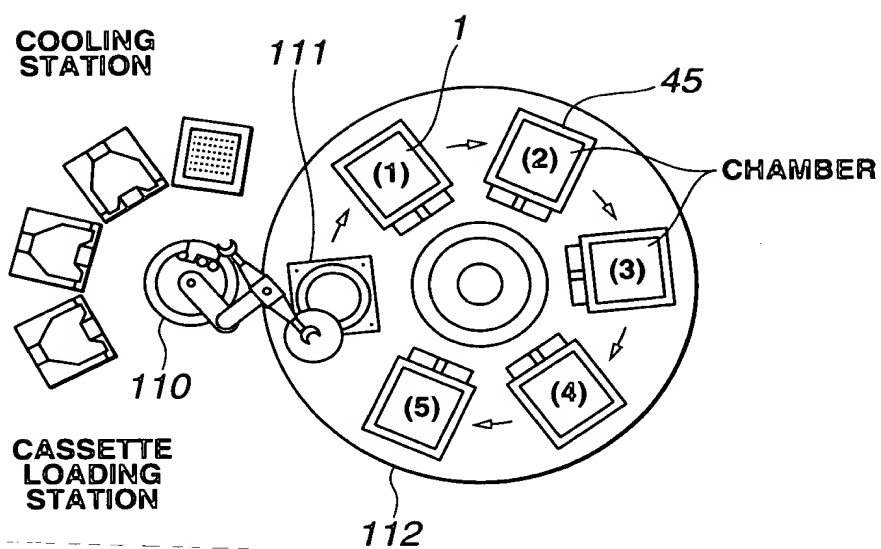


FIG.17

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[illegible]

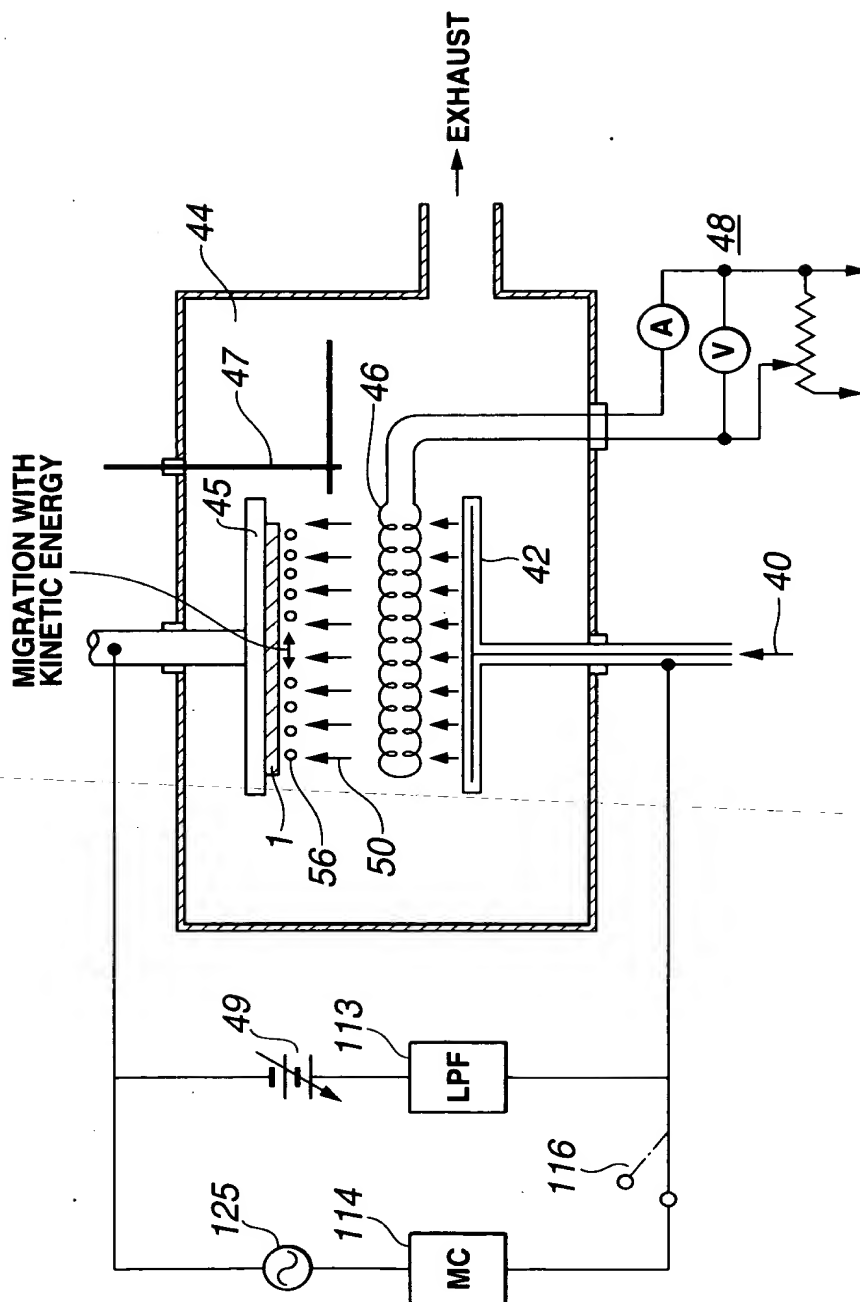


FIG. 22

19/20

COMBINATION OF MATERIAL GAS AND FILM TO BE FORMED

PRODUCED FILM	MATERIAL GAS
① Si OR POLYCRYSTAL Si	SiH ₄ , SiHCl ₃ , SiH ₂ Cl ₂ , SiCl ₄ Si ₂ H ₆
② SiO ₂	SiH ₄ , SiHCl ₂ , SiH ₂ Cl ₂ , SiCl ₄ , SiBr ₄ , SiI ₄ , SiF ₄ , Si(OC ₂ H ₅) ₄ , Si(OC ₂ H ₅) ₃ , (C ₂ H ₅)Si(OC ₂ H ₅) ₃ , C ₅ H ₁₁ Si(OC ₂ H ₅) ₃ , C ₆ H ₅ Si(OC ₂ H ₅) ₃ , (CH ₃) ₂ Si(OC ₂ H ₅) ₂ , AND O ₂ , NO, N ₂ O, NO ₂ , CO ₂ +H ₂ , H ₂ O
③ BPSG, BSG, PSG OR AsSG	MIX FOLLOWING GAS WITH MATERIAL GAS OF ② PH ₃ , B ₂ H ₆ , AsH ₃ , PO(OCH ₃) ₃ , B(OCH ₃) ₃ , B(OC ₃ H ₇) ₃
④ SiN _x	MIX NH ₃ , N ₂ H ₄ , N ₂ , WITH SiH ₄ , SiH ₆ , SiHCl ₃ , SiH ₂ Cl ₂ , SiH ₃ Cl, SiCl ₄ , SiBr ₄ ETC. Ar, He, ETC. AS CARRIER GAS
⑤ SiO _x N _y	SAME AS MATERIAL GAS OF ②, ④
⑥ Al	AlCl ₃ , Al(CH ₃) ₃ (TMA), Al(C ₂ H ₅) ₃ (TEA), Al(OC ₃ H ₇) ₃ H ₂ AS REDUCTION GAS
⑦ Al ₂ O _{3-x}	ADD CO ₂ +H ₂ , O ₂ , H ₂ O TO MATERIAL GAS OF ⑥
⑧ In ₂ O ₃	In(CH ₃) ₃ (TMI), In(C ₂ H ₅) ₃ (TEI), AND O ₂ , H ₂ O, CO ₂
⑨ REFRACTORY METAL	FLUORIDE (MoF ₆ , WF ₆), CHLORIDE (MoCl ₅ , WCl ₆ , TaCl ₅ , TiCl ₄ , ZrCl ₄), ORGANIC COMPOUND (Ta(OC ₂ H ₅) ₅ , (PtCl ₂) ₂ (CO) ₃ , W(CO) ₆ , Mo(CO) ₆
⑩ SILICIDE	MIX SILANE-BASED GAS SUCH AS SiH ₄ , Si ₂ H ₆ , ETC. WITH MATERIAL GAS OF ⑨
⑪ TiN	TiCl ₄ + N ₂ (+NH ₃)
⑫ TiON	ADD O ₂ , H ₂ O TO TiCl ₄ + N ₂ (+NH ₃)
⑬ Cu	HEXAFLUOROACETYLACETONATE COPPER (Cu(HFA) ₂) AND C((HFA) ₂ + H ₂ O OTHER MATERIALS OF CHELATE COMPOUND ARE Cu(DPM) ₂ , Cu(AcAc) ₂ , Cu(FOD) ₂ , Cu(PPM) ₂ , Cu(HFA)TMVS
⑭ Al-Si OR Al-Si-Cu	ADD MATERIAL GAS OF ① OR ⑬ TO MATERIAL GAS OF ⑥

* ADD EACH MATERIAL GAS TO HYDROGEN-BASED CARRIER GAS BASED ON H₂ GAS SUCH AS H₂, H₂+Ar, H₂+Ne, H₂+He, H₂+Kr, ETC.

FIG.23

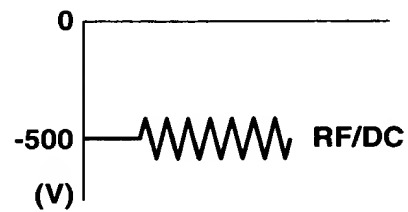
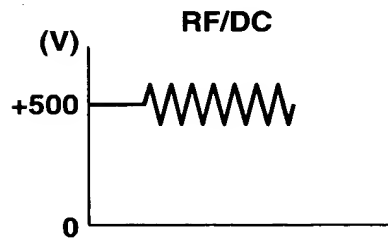
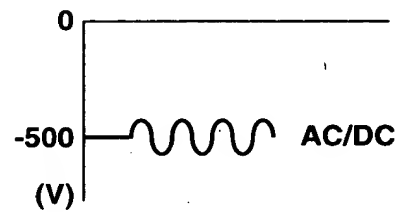
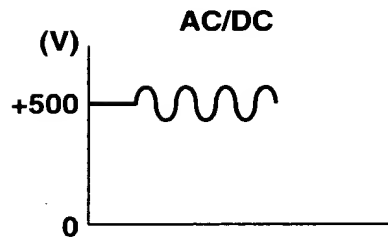
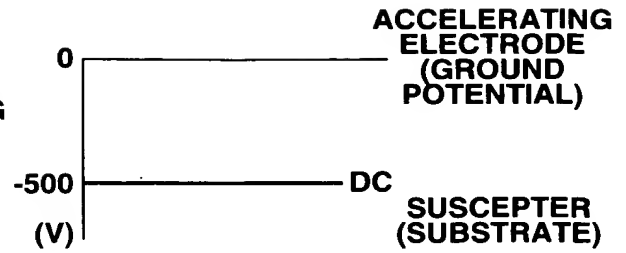
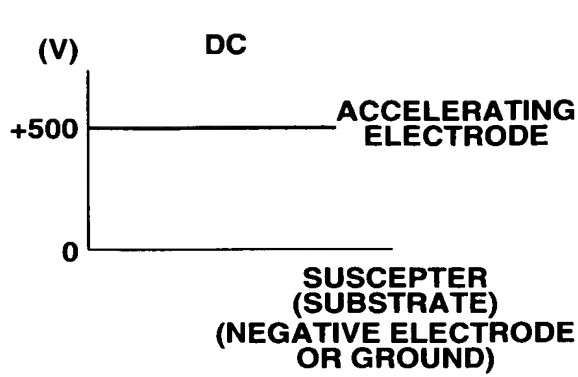


FIG.24A

FIG.24B

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